Connecting Virtual Observatories with Grid Enabled Services

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What is a Service?

- Data analysis or processing done after the data is retrieved from a data source
- Data sources can range from PI to data center to Virtual Observatories

Why Do We Need Services?

- Virtual Observatories address only part of the problem - data description, search and retrieval
- Data may not be readily compatible
- Services will reduce research startup time and enable new ways of multi-source science

Grid Enabled Services

- Distributed Environment
- Capable of Finding and Accessing Services
- Transparency to User

Grid Enabled Services

Service Node

Houses a number of services and associated libraries

Metadata

Each service has metadata description

Describes inputs/outputs and service type

Allows for coupling of services

Service Metadata

- Use existing metadata standards (SPASE) when available and develop additional Service Metadata
- Collaborate with SPASE group in order to create metadata standards for data providers and service providers

How would this work with a VO?

- Grid services are not limited to one discipline or Virtual Observatory
- Encourage VO's to provide access to Services although not required
- Future release of VHO will demonstrate VO interface to Services
- Either VO or user passes data URLs to Service User Interface and proceeds to select service(s)

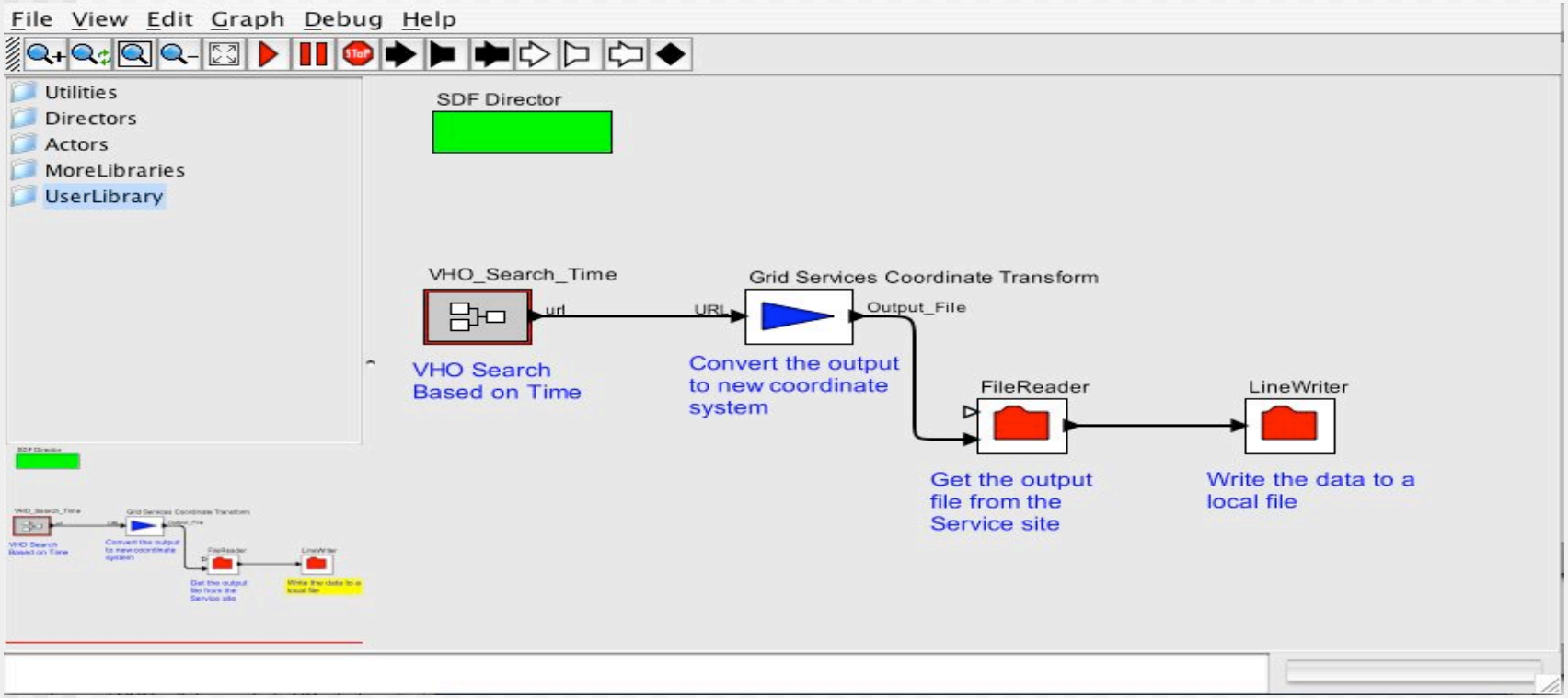
Extracting Data

Service

Data from VO

- Autonomous extraction of data requires detailed SPASE metadata
- Need to not only describe data contents but describe how it is laid out in the files
- “Groundwork for Integrated Analysis of Distributed S3C Data” - J. Vandergriff et. al., SM23A-01

Existing Community Tools

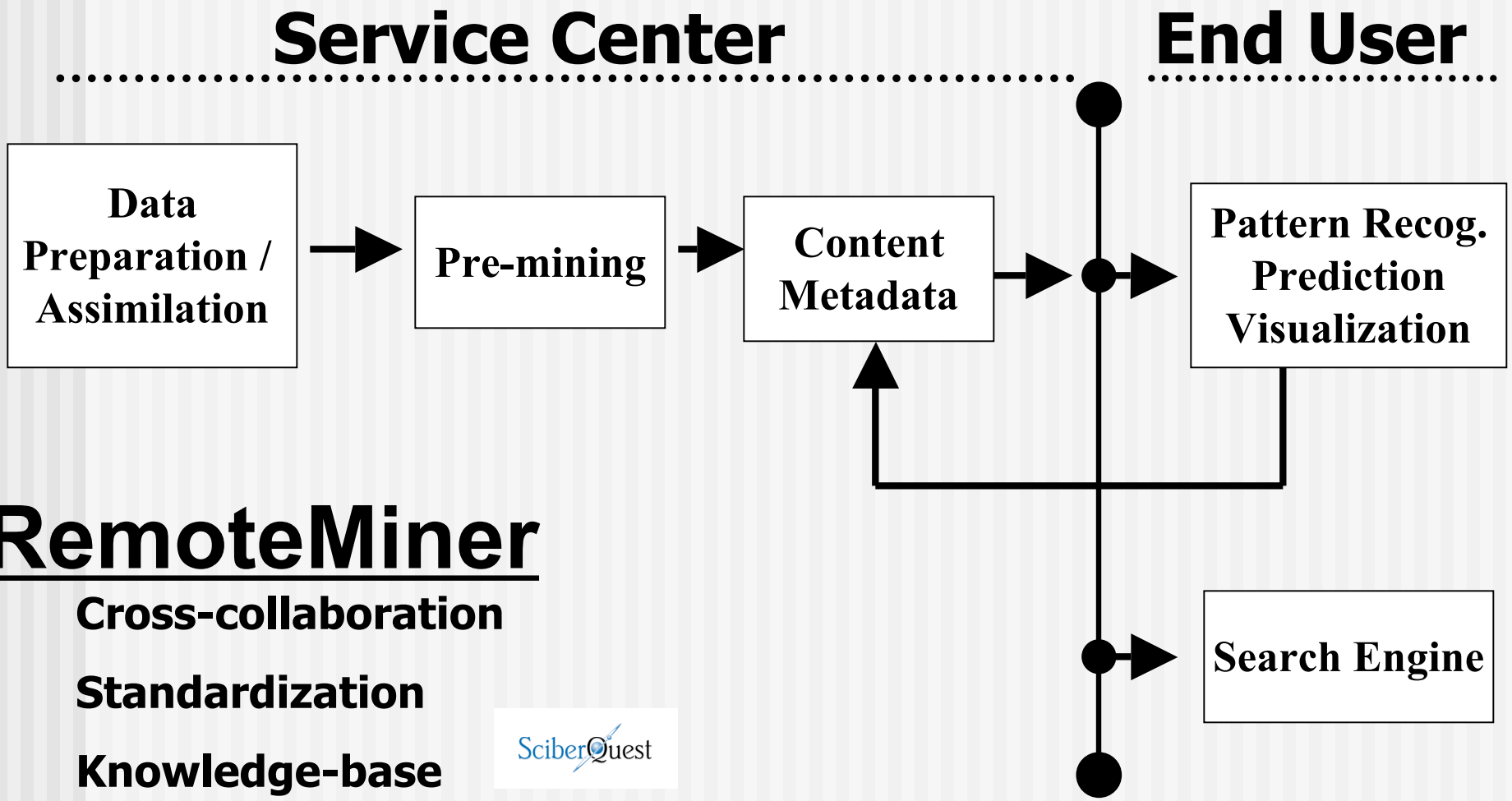


Existing tools such as CoSEC provide additional means of using and accessing Grid Services

Current Status

- Beginning initial development of framework for Grid Services
- Creating metadata standards for Services
- Will soon begin creating user interface and putting basic services in place
- Collaborating with H. Karimabadi on development of advanced data mining services

Advanced Data Mining Services



RemoteMiner

Cross-collaboration

Standardization

Knowledge-base

SciberQuest

Community Involvement

- Encourage community participation at this early stage
- Service suggestions
- Once system is in place the community can contribute computational resources in addition to service code